

**COMPUTER ENGINEERING MASTER OF SCIENCE DEGREE PROGRAM CHECKLIST
COLUMBIA UNIVERSITY**

Student: _____

(please print)

UNI: _____

Courses **Pts.**

CHECKLIST

(Core courses)

1. _____ 30 points of credit
2. _____ 15 points core Computer Engineering (see back)
3. _____ 15 points 6000 level EE or CS courses (including joint courses)
4. _____ At least 6 points from each department (CSEE, EECS, & ECBM courses can count toward either department minimum).
5. _____ no credit for 3000 or lower level courses
6. _____ 2.7 GPA minimum

(Other courses, approved by an advisor)

7. _____ no more than 9 points research (e.g. ELEN E4998, ELEN E6001, COMS W4901)
8. _____ no more than 3 points of APPROVED nontechnical courses (including courses in SEAS with significant nontechnical content)
9. _____ completion within 5 years
10. _____ no grade of P or R
11. _____ no credit for courses with material typically found in undergraduate engineering programs such as STAT W4105 Probability

Total points:

Approved:

_____ for the Department

_____ for the Dean

_____ Date:

_____ Date:

Note: If some courses listed were taken during the BS, a copy of an approved BS excess sheet must be attached.

Students must take at least 30 points of courses at Columbia University at or above the 4000 level. These must include at least 15 points from the courses listed below that are deemed core to computer engineering. At least 6 points of the 30 must be from each department. *CSEE, EECS, and ECBM* courses can count toward either department minimum. Other courses may be chosen with the prior approval of a faculty adviser in the Computer Engineering Program.

The overall program must include at least 15 points of 6000-level *ELEN, EECS, CSEE, or COMS* courses (exclusive of seminars). No more than 9 points of research may be taken for credit. No more than 3 points of (approved) nontechnical electives (at or above the 4000 level) may be included. A minimum GPA of at least 2.7 must be maintained, and all degree requirements must be completed within five years of the beginning of the first course credited toward the degree.

Core Computer Engineering Courses						
COMS	W4113	Fundamentals of large-scale distributed systems		EECS	E6321	Advanced digital electronic circuits
COMS	W4115	Programming languages and translators		ELEN	E6350	VLSI design laboratory
COMS	W4118	Operating systems, I		ELEN	E6488	Optical interconnects and interconnection networks
CSEE	W4119	Computer networks		ELEN	E6761	Computer communication networks, I
COMS	W4130	Principles and practice of parallel programming		ELEN	E6762	Computer communication networks, II*
CSEE	W4140	Networking laboratory		ELEN	E6765	Internet of things
COMS	W4180	Network security		ELEN	E6770	Topic: Next generation networks
EECS	E4321	Digital VLSI circuits		CSEE	E6824	Parallel computer architecture
EECS	E4340	Computer hardware design		CSEE	E6831	Sequential logic circuits*
ELEN	E4350	VLSI design laboratory*		CSEE	E6832	Topics in logic design theory*
ELEN	E4702	Digital communications		CSEE	E6847	Distributed embedded systems
ELEN	E4750	Signal processing & communications on mobile multicore processors		ELEN	E6850	Visual information systems
ELEN	E4810	Digital signal processing		ELEN	E6860	Advanced digital signal processing
CSEE	W4823	Advanced logic design		CSEE	E6861	Computer-aided design of digital systems
CSEE	W4824	Computer architecture		CSEE	E6868	System-on-chip platforms
ELEN	E4830	Digital image processing		ELEN	E6950	Wireless and mobile networking, I
CSEE	W4840	Embedded systems		ELEN	E6951	Wireless and mobile networking, II
ELEN	E4896	Music signal processing		COMS	E6998	Topic: Formal verification of hardware/software systems
COMS	E6118	Operating systems, II*		COMS	E6998	Topic: Embedded scalable platforms
CSEE	E6180	Modeling and performance evaluation		COMS	E6998	Topic: Advanced distributed systems
COMS	E6181	Advanced Internet services		COMS	E6998	Topic: Resilient hardware systems

* Occasionally Offered